



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,852	07/09/2001	Michael O'Donnell	50230/002001	9115

21559 7590 09/19/2002

CLARK & ELBING LLP
101 FEDERAL STREET
BOSTON, MA 02110

EXAMINER

ROVNAK, JOHN EDMUND

ART UNIT

PAPER NUMBER

3714

DATE MAILED: 09/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/901,852	O'DONNELL, MICHAEL
	Examiner	Art Unit
	John Rovnak	3714
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
Period for Reply		
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.		
<ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 		
Status		
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>7/9/01</u> .		
2a) <input type="checkbox"/> This action is FINAL. 2b) <input checked="" type="checkbox"/> This action is non-final.		
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.		
Disposition of Claims		
4) <input checked="" type="checkbox"/> Claim(s) <u>1-6</u> is/are pending in the application.		
4a) Of the above claim(s) _____ is/are withdrawn from consideration.		
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.		
6) <input checked="" type="checkbox"/> Claim(s) <u>1-6</u> is/are rejected.		
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.		
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.		
Application Papers		
9) <input checked="" type="checkbox"/> The specification is objected to by the Examiner.		
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner.		
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).		
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner.		
If approved, corrected drawings are required in reply to this Office action.		
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.		
Priority under 35 U.S.C. §§ 119 and 120		
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).		
a) <input type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of:		
1. <input checked="" type="checkbox"/> Certified copies of the priority documents have been received.		
2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.		
3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).		
* See the attached detailed Office action for a list of the certified copies not received.		
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).		
a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.		
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.		
Attachment(s)		
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)		
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.		
4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.		
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)		
6) <input type="checkbox"/> Other: _____.		

1. The attempt to incorporate subject matter into this application by reference to an attached sample questionnaire is improper. The reference to the attached sample questionnaire on page 2 of the specification is improper and requires amendment or removal. Applicant is directed to the example of the Appendix of Bro (U.S. Pat. No. 5,72,418).

2. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

3. Words in Drawings

(a) The drawings shall not contain text matter, except a single word or words, when absolutely indispensable, such as "water," "steam," "open," "closed," "section on AB," and, in the case of electric circuits and block schematic or flow sheet diagrams, a few short catchwords indispensable for understanding.

(b) Any words used shall be so placed that, if translated, they may be pasted over without interfering with any lines of the drawings.

4. Drawings, Formulae, and Tables, in Text Matter

(a) The request, the description, the claims and the abstract shall not contain drawings.

(b) The description, the claims and the abstract may contain chemical or mathematical formulae.

(c) The description and the abstract may contain tables; any claim may contain tables only if the subject matter of the claim makes the use of tables desirable.

(d) Tables and chemical or mathematical formulae may be placed sideways on the sheet if they cannot be presented satisfactorily in an upright position thereon; sheets on which tables or chemical or mathematical formulae are presented sideways shall be so presented that the tops of the tables or formulae are at the left side of the sheet.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claim 1, in recitation e), the step of "taking into account the assessments of (a)-(d)" is vague and indefinite. What is the specific claimed relationship to (a), (b) (c) and (d)? Furthermore, a strategy, "including positive reinforcement and self-efficacy" is indefinite as to the specific implementation of such tools.

8. Regarding claim 5, recitation d), the step of determining which behavior or behaviors are to be worked on first "on the basis of (a)-(c)" is vague and indefinite. What is the specific claimed relationship to (a), (b) and (c)?

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a series of mental steps. No structural means is present in the claims.

A section from MPEP 2106 follows for the applicant's information:

Statutory Process Claims

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in i) below), or (B) be limited to a practical application within the technological arts (discussed in ii) below). See Diamond v. Diehr, 450 U.S. at 183-84, 209 USPQ at 6 (quoting Cochrane v. Deener, 94 U.S. 780, 787-88 (1877)) ("A [statutory] process is a mode of treatment of certain materials to produce a given result.

It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.... The process requires that certain things should be

done with certain substances, and in a certain order; but the tools to be used in doing this

may be of secondary consequence."). See also Alappat, 33 F.3d at 1543, 31 USPQ2d at

1556-57 (quoting Diamond v. Diehr, 450 U.S. at 192, 209 USPQ at 10). See also id. at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing O'Reilly v.

Morse, 56 U.S. (15 How.) at 114-19). If a physical transformation occurs outside the computer, a disclosure that permits a skilled artisan to practice the claimed invention, i.e.,

to put it to a practical use, is sufficient. On the other hand, it is necessary for the claimed

Art Unit: 3714

invention taken as a whole to produce a practical application if there is only a transformation of signals or data inside a computer or if a process merely manipulates concepts or converts one set of numbers into another.

A claimed process is clearly statutory if it results in a physical transformation outside the computer, i.e., falls into one or both of the following specific categories ("safe harbors").

i) Safe Harbors

- Independent Physical Acts (Post-Computer Process Activity)

A process is statutory if it requires physical acts to be performed outside the computer independent of and following the steps to be performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure. *Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8. Thus, if a process claim includes one or more post-computer process steps that result in a physical transformation outside the computer (beyond merely conveying the direct result of the computer operation), the claim is clearly statutory.

Examples of this type of statutory process include the following:

- A method of curing rubber in a mold which relies upon updating process parameters, using a computer processor to determine a time period for curing the rubber, using the computer processor to determine when the time period has been reached in the curing process and then opening the mold at that stage.
- A method of controlling a mechanical robot which relies upon storing data in a computer that represents various types of mechanical movements of the robot, using a computer processor to calculate positioning of the robot in relation to given tasks to be performed by the robot, and controlling the robot's movement and position based on the calculated position.

Examples of claimed processes that do not achieve a practical application include:

- step of "updating alarm limits" found to constitute changing the number value of a variable to represent the result of the calculation (*Parker v. Flook*, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978));
- final step of "equating" the process outputs to the values of the last set of process inputs found to constitute storing the result of calculations (*In re Gelnovatch*, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979); and
- step of "transmitting electrical signals representing" the result of calculations (*In re De Castelet*, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977) ("That the computer is instructed to transmit electrical signals, representing the results of its calculations, does not constitute the type of post solution activity' found in *Flook*, [437 U.S. 584, 198 USPQ 193 (1978)], and does not transform the claim into one for a process merely using an algorithm. The final transmitting step constitutes nothing more than reading out the result of the calculations.")); and
- step of displaying a calculation as a gray code scale (*In re Abele*, 684 F.2d 902, 908, 214 USPQ 682, 687 (CCPA 1982)).

Art Unit: 3714

- Manipulation of Data Representing Physical Objects or Activities (Pre-Computer Process Activity)

Another statutory process is one that requires the measurements of physical objects or activities to be transformed outside of the computer into computer data (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979) (data-gathering step did not measure physical phenomenon); Arrhythmia, 958 F.2d at 1056, 22 USPQ2d at 1036), where the data comprises signals corresponding to physical objects or activities external to the computer system, and where the process causes a physical transformation of the signals which are intangible representations of the physical

objects or activities. Schrader, 22 F.3d at 294, 30 USPQ2d at 1459 citing with approval Arrhythmia, 958 F.2d at 1058-59, 22 USPQ2d at 1037-38; Abele, 684 F.2d at 909, 214 USPQ at 688; In re Taner, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982).

Examples of this type of claimed statutory process include the following:

- A method of using a computer processor to analyze electrical signals and data representative of human cardiac activity by converting the signals to time segments, applying the time segments in reverse order to a high pass filter means, using the computer processor to determine the amplitude of the high pass filter's output, and using the computer processor to compare the value to a predetermined value. In this example the data is an intangible representation of physical activity, i.e., human cardiac activity. The transformation occurs when heart activity is measured and an electrical signal is produced. This process has real world value in predicting vulnerability to ventricular tachycardia immediately after a heart attack.
- A method of using a computer processor to receive data representing Computerized Axial Tomography ("CAT") scan images of a patient, performing a calculation to determine the difference between a local value at a data point and an average value of the data in a region surrounding the point, and displaying the difference as a gray scale for each point in the image, and displaying the resulting image. In this example the data is an intangible representation of a physical object, i.e., portions of the anatomy of a patient. The transformation occurs when the condition of the human body is measured with X-rays and the X-rays are converted into electrical digital signals that represent the condition of the human body. The real world value of the invention lies in creating a new CAT scan image of body tissue without the presence of bones.
- A method of using a computer processor to conduct seismic exploration, by imparting spherical seismic energy waves into the earth from a seismic source, generating a plurality of reflected signals in response to the seismic energy waves at a set of receiver positions in an array, and summing the reflection signals to produce a signal simulating the reflection response of the earth to the seismic energy. In this example, the electrical signals processed by the computer represent reflected seismic energy. The transformation occurs by converting the spherical seismic energy waves into electrical signals which provide a geophysical representation of

Art Unit: 3714

formations below the earth's surface. Geophysical exploration of formations below the surface of the earth has real world value.

Examples of claimed processes that independently limit the claimed invention to safe harbor include:

- a method of conducting seismic exploration which requires generating and manipulating signals from seismic energy waves before "summing" the values represented by the signals (Taner, 681 F.2d at 788, 214 USPQ at 679); and - a method of displaying X-ray attenuation data as a signed gray scale signal in a "field" using a particular algorithm, where the antecedent steps require generating the data using a particular machine (e.g., a computer tomography scanner). Abele, 684 F.2d at 908, 214 USPQ at 687 ("The specification indicates that such attenuation data is available only when an X-ray beam is produced by a CAT scanner, passed through an object, and detected upon its exit. Only after these steps have been completed is the algorithm performed, and the resultant modified data displayed in the required format."). Examples of claimed processes that do not limit the claimed invention to pre-computing safe harbor include:
- "perturbing" the values of a set of process inputs, where the subject matter "perturbed" was a number and the act of "perturbing" consists of substituting the numerical values of variables (Gelnovatch, 595 F.2d at 41 n.7, 201 USPQ at 145 n.7 ("Appellants' claimed step of perturbing the values of a set of process inputs (step 3), in addition to being a mathematical operation, appears to be a data-gathering step of the type we have held insufficient to change a nonstatutory method of calculation into a statutory process.... In this instance, the perturbed process inputs are not even measured values

of physical phenomena, but are instead derived by numerically changing the values in the

previous set of process inputs.")); and

- selecting a set of arbitrary measurement point values (Sarkar, 588 F.2d at 1331, 200 USPQ at 135).

If a claim does not clearly fall into one or both of the safe harbors, the claim may still be statutory if it is limited to a practical application in the technological arts.

ii) Computer-Related Processes Limited to a Practical Application in the Technological Arts

There is always some form of physical transformation within a computer because a computer acts on signals and transforms them during its operation and changes the state

of its components during the execution of a process. Even though such a physical transformation occurs within a computer, such activity is not determinative of whether the

process is statutory because such transformation alone does not distinguish a statutory computer process from a nonstatutory computer process. What is determinative is not

how the computer performs the process, but what the computer does to achieve a practical application. See *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036.

A process that merely manipulates an abstract idea or performs a purely mathematical algorithm is nonstatutory despite the fact that it might inherently have some usefulness. In

Sarkar, 588 F.2d at 1335, 200 USPQ at 139, the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be *per se* subject to patenting as a "process" under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.

For such subject matter to be statutory, the claimed process must be limited to a practical

application of the abstract idea or mathematical algorithm in the technological arts. See *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT & T*, 172 F.3d at 1358,

50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (in banc). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.

Examples of this type of claimed statutory process include the following:

- A computerized method of optimally controlling transfer, storage and retrieval of data between cache and hard disk storage devices such that the most frequently used data is readily available.

Art Unit: 3714

- A method of controlling parallel processors to accomplish multi-tasking of several computing tasks to maximize computing efficiency. See, e.g., *In re Bernhart*, 417 F.2d 1395, 1400, 163 USPQ 611,616 (CCPA 1969).
- A method of making a word processor by storing an executable word processing application program in a general purpose digital computer's memory, and executing the stored program to impart word processing functionality to the general purpose digital computer by changing the state of the computer's arithmetic logic unit when program instructions of the word processing program are executed.
- A digital filtering process for removing noise from a digital signal comprising the steps of calculating a mathematical algorithm to produce a correction signal and subtracting the correction signal from the digital signal to remove the noise.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. * Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bro in view of Von Fellenberg.

Bro discloses a method for assisting a person in changing a behavior, said method comprising the steps of:

- a) having the person assess the degree of his readiness to change [Col. 25, lines 26-34],
- b) having the person assess the difficulty of changing said behavior [Appendix, col. 73-74, under "Establishing Referent Power", "the patient is encouraged to disclose his or her"...."weaknesses"],
- c) having the person consider the benefits he perceives would accrue as a result of changing said behavior [See col. 26, Table 1, item 140, as well as the example in the

Art Unit: 3714

Appendix, col. 71-72, under "Social Liberation": "I realize that people who are fit and trim appear to reap greater social and financial rewards than non-exercisers. "]

- d) having the person consider the obstacles he perceives would impede changing said behavior [See col. 26, Table 1, item 142 as well as col. 23, starting at line 15, wherein the patient is prepared to realistically expect difficulties and problems that may lie ahead, including preplanning, role playing and imagery.
- e) devising a strategy for changing said behavior, including positive re-enforcement and self-efficacy, taking into account the assessments of (a)-(d), and
- f) implementing the strategy of (e) [Col. 13 lines 41-42, col. 14, lines 64-67; col. 26, Table 1, item 136; col. 26, lines 44-65].

While Bro does not discuss the use of a "quantitative scale" for patient assessments as claimed, use of a quantitative scale for psychotechnological assessment would have been obvious in view of the method of Von Fellenberg Figs. 1a-1c.

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bro in view of Von Fellenberg and further in view of Schwarzer et al ("Self-Efficacy and Health Behaviours). Page 13 of 30 of Schwarzer et al, under "Outcome Expectancy", teaches the ranking by importance of perceived benefits of changing a behavior. It would have been obvious to one of ordinary skill in the art that the extensive evaluation process of Bro could include the teaching of Schwarzer et al regarding the ranking of importance of benefits of changing a behavior.

13. Claims 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bro in view of Von Fellenberg and further in view of Schwarzer et al.

Art Unit: 3714

14. It would have been obvious to one of ordinary skill in the art that the user of the Bro system could have multiple behaviors he wishes to change, since such a condition is common in society. Bro, col. 11 lists numerous problems addressable by his system. Prioritizing behaviors to be changed would have been further obvious in view of everyday practice in problem solving.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bro in view of Von Fellenberg. See the above discussion regarding claim 1. Bro further discusses the providing of a supportive environment including a social support network [Col. 1 lines 33-35].

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the publication "The Physicians' Guide to Helping Patients with Alcohol Problems", especially page 4, 6, 7, and 8. Also, Merrill et al discloses an Interactive Goal Achievement System and Method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rovnak whose telephone number is (703) 308-3087.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on (703) 308-1806. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.


John Rovnak
Primary Examiner
Art Unit 3714

September 13, 2002